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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,028	03/30/2004	Jobst Ulrich Gellert	2107.0650001/TUM/RLP	2797

47654 7590 04/03/2007
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EXAMINER

EWALD, MARIA VERONICA

ART UNIT	PAPER NUMBER
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1722

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/812,028

Applicant(s)

GELLERT ET AL.

Examiner

Maria Veronica D. Ewald

Art Unit

1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-23 and 33-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 33-37 is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-13,16-23 and 38-42 is/are rejected.
- 7) ☒ Claim(s) 5,14 and 15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 12/29/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

13. Claims 33 – 37 are allowed. The following is a statement of reasons for the indication of allowable subject matter: Prior art fails to teach a manifold block, wherein the second end of the radial pipe is telescopically slidable inside the first end of the nozzle pipe.

Claims 5 and 14 – 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. With respect to claim 5, prior art fails to teach a manifold block wherein the second end of the radial pipe is telescopically slidable inside the first end of the nozzle pipe, wherein the distance between said junction component and said nozzle is adjustable prior to casting. Furthermore, with respect to claims 14 – 15, prior art fails to teach a manifold wherein there is at least one branching junction component fixed in the manifold block and at least one branching pipe engaging one opening of the radial bore of the branching junction component.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1722

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3 – 4, 6 – 9, 11 – 13, 16 – 23 and 38 – 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Schmidt (U.S. 4,705,473). Schmidt teaches an injection molding apparatus, comprising: a cast manifold block (item 44 – figure 1), including a junction component (item 94 – figure 1) fixed in the manifold block and having an axial bore with a first end opening to an exterior surface of said manifold block for receiving a flow of melt material, and at least one radial bore in fluid communication with the axial bore and having at least one opening to an outer surface of said junction component (item 98 – figure 1; column 3, lines 55 – 62), and at least one pipe fixed in the manifold block, wherein said at least one pipe has a first end that engages said junction component at the at least one opening of said radial bore (item 50 – figure 1; column 3, lines 5 – 12), said junction component and said at least one pipe defining a manifold channel for directing the flow of melt material; and a nozzle defining a nozzle channel in fluid communication with the manifold channel for receiving the flow of melt material through said at least one pipe (item 10 – figure 1); wherein said at least one pipe has at least one bend (item 50 – figure 1); and wherein the at least one nozzle pipe fixed in the manifold block has a first end engaging a second end of said at least one pipe and located intermediate the at least one pipe and the nozzle, said nozzle pipe defining the manifold channel with the at least one pipe and the junction component.

With respect to claims 6 – 9, the reference further teaches that the manifold further includes: at least one support pillar component fixed in said manifold block, said support pillar component defining an axial bore and extending a height of said manifold block (item 56 – figure 1); and a valve pin extending and retracting through said manifold via said axial bore of said support pillar component and into said nozzle channel (item 60 – figure 1); wherein said valve pin is connected to an actuation unit disposed outside of said manifold (item 72 – figure 1; column 3, lines 30 – 35); wherein said support pillar component is coupled to said at least one pipe (figure 1); wherein said manifold further includes a heating element fixed within said manifold block (item 48 – figure 1; column 3, lines 67 – 68; column 4, lines 1 – 5).

With respect to claims 11 – 13, the reference also teaches that the heating element is a coil surrounding a configuration of at least said junction component engaged with said at least one pipe; wherein said heating element is a coil wrapping at least one full time around said at least one pipe and wherein said manifold further includes a plurality of heating elements (column 3, line 68; column 4, lines 1 – 5).

With respect to claims 16 – 20, Schmidt further teaches that the at least one pipe is made of stainless steel (column 3, lines 5 – 10); wherein said manifold block is made from a soft thermally conductive metal and wherein said manifold block is made from a material selected from the group consisting of copper, copper alloys, bronze, brass, aluminum, aluminum alloys, steel, steel alloys, and combinations thereof (column 3, lines 5 – 10); wherein said junction

Art Unit: 1722

component and said support pillar are made from a tool steel with a high melting point (column 3, lines 5 – 10, 55 – 60); wherein at least one of said junction component and said support pillar component are made from H13 tool steel (column 3, lines 5 – 10, 55 – 60).

With respect to claims 21 – 23, Schmidt also teaches that the junction component includes a plurality of radial bores defining a plurality of openings to the outer surface of said junction component and wherein said manifold further includes a plurality of pipes, such that each of said plurality of pipes is fluidly connected to one of said plurality of openings (figure 1; column 2, lines 39 – 42; column 3, lines 5 – 10; column 4, lines 45 – 55); wherein said junction component is in fluid communication with a sprue bushing (item 94 – figure 1) and wherein said junction component is a sprue bushing (item 96 – figure 1).

With respect to claims 38 – 42, Schmidt teaches a manifold including a manifold block (item 44 – figure 1), a junction component fixed in the manifold block and having an axial bore with a first end opening to an exterior surface of said manifold block for receiving a flow of melt material (item 94 – figure 1), and at least one radial bore in fluid communication with the axial bore and having at least one opening to an outer surface of said junction component (item 98 – figure 1), at least one pipe fixed in the manifold block, wherein said at least one pipe has a first end that engages said junction component at the at least opening of said radial bore (item 50 – figure 1), the junction component and the at least one pipe defining a manifold channel for the flow of melt material (figure 1), and at least one support pillar component coupled to said at least one pipe and fixed

Art Unit: 1722

in said manifold block (item 56 – figure 1), said support pillar component defining an axial bore and extending a height of said manifold block (figure 1); a nozzle defining a nozzle channel in fluid communication with the manifold channel for receiving the flow of melt material (item 10 – figure 1), and a valve pin retractably extending through said manifold block via said axial bore of said support pillar component and into said nozzle channel (item 60 – figure 1); wherein said manifold is a cast block (figure 1); wherein said at least one pipe has at least one bend (item 50 – figure 1); wherein said valve pin is connected to an actuation unit disposed outside of said manifold (item 72 – figure 1; column 3, lines 30 – 35); wherein said manifold further includes a heating element fixed in said block (item 48 – figure 1; column 3, lines 5 – 10).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt in view of Yu (U.S. 6,544,027). Schmidt teaches the characteristics previously described but do not teach that the heating element comprises copper; however, this is an obvious modification and known to one of ordinary skill in the art.

For example, in a manifold of an injection molding machine, Yu teaches a heated manifold into which a heating wire is inserted to ensure that the plastic melt remains in its molten state. The heating wire has an upper end, which is closed by a finishing material made of copper, because copper has excellent thermal conductivity (column 2, lines 1 – 5). The thermal conductivity of the copper allows even heat transfer throughout the manifold and thus, to the plastic melt itself.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the heating element(s) of Schmidt, such that the heating element is comprised of copper wire, for the purpose of allowing even heat transfer throughout the manifold and thus, to the plastic melt itself due to the excellent thermal conductivity of copper.

Response to Arguments

16. Applicant's arguments, filed December 29, 2006, with respect to the rejection of claims 1 – 5, 9, 11 – 13, 14 – 15, 17 – 18, 21 – 23 over the reference of Gunther (U.S. 5,295,806) have been fully considered and are persuasive. The rejection of these prior-listed claims with respect to the reference of Gunther, has thus, been withdrawn. Applicant argued that the manifold of Gunther did not include separate junction and pipe components fixed in the manifold block and Examiner agrees. Gunther teaches a manifold comprised of a block-shaped casing having a material flow tube encased by a heating element without

Art Unit: 1722

separate components fixed in the casing. Thus, the manifold is comprised of one integral casing as a unit.

However, Applicant's arguments filed December 29, 2006, with respect to the reference of Schmidt have been fully considered but they are not persuasive. Applicant argued that Schmidt does not teach a cast manifold block, within which junction and pipe components are fixed. However, Examiner disagrees. Broadly interpreted, a cast manifold block, can be defined as a block cast or formed by liquid metal poured into a mold, to be the manifold block, prior to any boring of channels within the block. However, the block itself *is to be the manifold*.

Therefore, the block of Schmidt, has in it, a junction component and a pipe fixed *in the manifold block*. As written, claim 1 does not clearly define a manifold comprised of separate pieces put together, wherein the manifold is cast *around the pieces*. Thus, Examiner has maintained the rejection(s) of independent claims 1 and 38, with the indication of allowable subject matter in claims 5, 14 – 15 and 33 – 37.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory

Art Unit: 1722

action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1722

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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